

Amendment Under 37 C.F.R. § 1.114(c)
USSN 09/744,801
Attorney Docket Q62916
December 3, 2004

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1-25. (Canceled)

26. (New) A carbon baking furnace comprising a refractory lined kiln defining a baking path, wherein green carbon articles are substantially continuously loaded into the kiln and packed in a sacrificial medium, wherein the packed carbon articles are substantially continuously displaced through said baking path to form baked carbon articles, and wherein said baked carbon articles are substantially continuously discharged from the kiln.

27. (New) A carbon baking furnace according to claim 26 wherein said refractory lined kiln comprises a plurality of heating zones.

28. (New) A carbon baking furnace according to claim 27 wherein said refractory lined kiln comprises a first heating zone for heating the green carbon articles to remove volatile organic compounds and a high temperature heating zone for baking the carbon articles.

29. (New) A carbon baking furnace according to claim 28 wherein the high temperature zone comprises a plurality of heating zones.

30. (New) A carbon baking furnace according to claim 26 wherein said baking path is substantially linear.

31. (New) A carbon baking furnace according to claim 26 wherein the refractory lined kiln comprises guides to position the carbon articles within the baking path.

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32. (New) A carbon baking furnace according to claim 26 wherein said baking path is substantially vertical.

33. (New) A carbon baking furnace according to claim 32 wherein the green carbon articles are substantially continuously loaded into the kiln by a conveyor and a hydraulic ram whereby the conveyor positions the green carbon articles adjacent to the top of the substantially vertical baking path and the hydraulic ram positions the green carbon articles into the top of the baking path.

34. (New) A carbon baking furnace according to claim 32 wherein the baked carbon articles are substantially continuously discharged from the substantially vertical baking path by a plurality of hydraulic rams and a conveyor whereby the bottom-most baked carbon article is supported by a hydraulic ram and the adjacent baked carbon article is engaged and supported by a pair of opposed rams while the bottom-most baked carbon article is positioned by the first mentioned hydraulic ram onto the conveyor.

35. (New) A carbon baking furnace according to claim 32 wherein the packed carbon articles are substantially continuously displaced through the baking path under gravity.

36. (New) A carbon baking furnace according to claim 26 comprising a hopper for the sacrificial medium, the hopper being fitted with a nozzle for spreading the sacrificial medium over and around each green carbon article.

37. (New) A carbon baking furnace according to claim 26 wherein said sacrificial medium is packing coke having a maximum particle size of less than 15mm.

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38. (New) A carbon baking furnace according to claim 26 comprising scrapers for removing the sacrificial medium from the baked carbon articles downstream of the kiln.

39. (New) A process for baking carbon articles, said process comprising the steps of substantially continuously loading green carbon articles into a refractory lined kiln, said kiln defining a baking path, packing said green carbon articles in a sacrificial medium prior to substantially continuously displacing the packed carbon articles through said baking path to form baked carbon articles, and substantially continuously discharging the baked carbon articles from the kiln.

40. (New) A process for baking carbon articles according to claim 39 wherein the packed carbon articles are displaced through the kiln at a uniform rate.

41. (New) A process for baking carbon articles according to claim 39 wherein the packed carbon articles are displaced through the kiln at a step-wise rate.

42. (New) A process for baking carbon articles according to claim 39 wherein the refractory lined kiln operates at equilibrium temperatures.

43. (New) A process for baking carbon articles according to claim 39 wherein the green carbon articles are heated in a first heating zone of the refractory-lined kiln to remove volatile organic compounds from the articles, and wherein the volatile organic compounds are extracted from the kiln.

44. (New) A process for baking carbon articles according to claim 39 wherein said baking path is substantially linear.

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45. (New) A process for baking carbon articles according to claim 39 wherein the packed carbon articles are guided through the baking path by guides in the refractory lined kiln.

46. (New) A process for baking carbon articles according to claim 39 wherein said baking path is substantially vertical.

47. (New) A process for baking carbon articles according to claim 46 wherein the green carbon articles are substantially continuously loaded into the kiln by a conveyor and a hydraulic ram whereby the conveyor positions the green carbon articles adjacent to the top of the substantially vertical baking path and the hydraulic ram positions the green carbon articles into the top of the baking path.

48. (New) A process for baking carbon articles according to claim 46 wherein the packed carbon articles are substantially continuously displaced through the baking path under gravity.

49. (New) A process for baking carbon articles according to claim 46 wherein the rate at which the packed carbon articles pass down the substantially vertical baking path is controlled by retarding or braking the movement of the lower or lowest carbon articles.

50. (New) A process for baking carbon articles according to claim 46 wherein the baked carbon articles are substantially continuously discharged from the substantially vertical baking path by supporting the bottom-most baked carbon article with a hydraulic ram, engaging and supporting the adjacent baked carbon article with a pair of opposed rams, and using the first mentioned hydraulic ram to position the bottom-most baked carbon article onto a conveyor.

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51. (New) A process for baking carbon articles according to claim 39 wherein the sacrificial medium is stored in a hopper fitted with a nozzle and is spread over and around the green carbon articles by means of the nozzle.

52. (New) A process for baking carbon articles according to claim 39 wherein said sacrificial medium is packing coke having a maximum particle size of less than 15mm.

53. (New) A process for baking carbon articles according to claim 39 wherein the sacrificial medium that has been displaced through the baking path with the packed carbon articles is separated from the baked carbon articles downstream of the refractory lined kiln.

54. (New) A process for baking carbon articles according to claim 53 wherein the sacrificial medium is separated from the baked carbon articles by means of scrapers.